

pales and *radicis*, the female genitalia are subject to considerable individual variation, besides being warped and shrunken in many cabinet specimens; the drawings of these parts, therefore (fig. 9), have been made somewhat diagrammatic. The spermatheca may perhaps have taxonomic value, as this structure shows a slight average difference in the two species, being a little longer, more slender, and more sharply bent in *radicis* (figs. 10 and 11). The bursa copulatrix of *pales* is relatively longer, of *radicis* shorter and constricted about the middle, but these apparent differences are quite likely the result of greater shrinkage of the sack in the specimens of *radicis* examined.

The drawings were made by Mrs. E. A. Carlin.

EXPLANATION OF PLATE 26.

- Fig. 1. *Hylobius radicis*, tip of male median lobe.
 Fig. 2. *Hylobius radicis*, male median lobe in dorsal view.
 Fig. 3. *Hylobius radicis*, male median lobe in side view.
 Fig. 4. *Hylobius pales*, tip of male median lobe.
 Fig. 5. *Hylobius pales*, male median lobe in dorsal view.
 Fig. 6. *Hylobius pales*, male median lobe in side view.
 Fig. 7. *Hylobius radicis*, hind tibial uncus of male.
 Fig. 8. *Hylobius pales*, hind tibial uncus of male.
 Fig. 9. Female genitalia drawn from specimens of *pales*: *a*, 8th tergite; *b*, 8th sternite; *c*, intestine; *d*, bursa copulatrix; *e*, section of oviduct.
 Fig. 10. *Hylobius pales*, spermatheca of female.
 Fig. 11. *Hylobius radicis*, spermatheca of female.

A NEW SPINNING MITE ON CITRUS AT YUMA, ARIZONA.

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From time to time, during the past few years, the writer has received specimens of a mite attacking citrus trees, especially grapefruit and lemons, in the Yuma Valley of Arizona. Since satisfactory male material was lacking in these consignments, it was impossible to be certain of the specific identity of this mite. On the occasion of a recent trip to the Yuma Valley, the writer was able to obtain a series of males of this mite, and recent studies have revealed that the "red spider" at Yuma is an undescribed species, and it is herewith described:

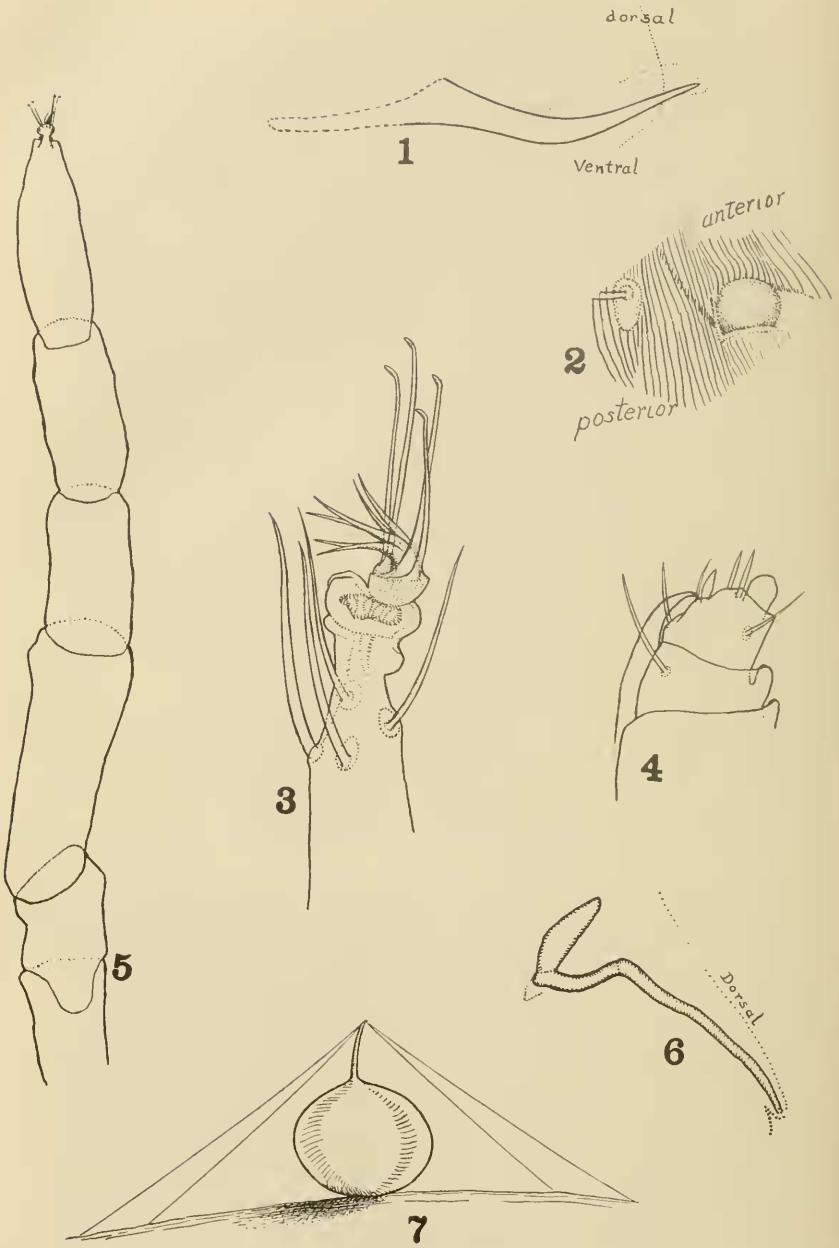
Tetranychus yumensis, sp. nov.

Female.—General body color rusty red or ferruginous, usually with a few small dark spots; legs paler. A single pale eye cornea on each side. Body oval, in length averaging 0.32 mm.; width, averaging 0.18 mm. (in preserved material). Dorsal setae pale, not arising from tubercles. Mandibular plate rounded anteriorly, with no emargination. "Thumb" of palpus fully as wide as long, bearing at its tip a strong, slightly spatulate "finger" whose thickness is almost equal to its length; on its upper distal corner are two pin-shaped pseudo-fingers; on upper side hardly half way to base is a sensilla much slenderer than terminal "finger," and between this and base are two setae somewhat exceeding the sub-basal "finger"; a strong seta arises latero-ventrally about half way from tip to base of "thumb." Claw on the penultimate joint of palpus about reaching sub-basal sensilla. Foreleg fully equaling body length (posterior margin to tip of mandibular plate), relative lengths of joints as follows: Trochanter, 13; femur, 27; patella, 17; tibia, 18; tarsus, 25. Tip of tarsus bearing a claw which is bent sharply downward at a point rather near its base; portion of claw distad of point of bending is split into six component, subequal spurs. The usual series of four tenent hairs arise in pairs by the side of the claw base. The collar trachea departs radically from the orthodox U-shaped structure typical of *Tetranychus*, consisting of a narrow straightish tube which is abruptly deflected downward and as abruptly deflected upward as a somewhat swollen chamber, the whole structure being rather pipe-shaped. Egg nearly spherical but very slightly compressed, with a weak dorsal axial stalk which in length is about half the vertical thickness of the egg; a few fibrils often extending from tip of stalk to supporting substratum.

Male.—Abdomen less oval and more wedge-shaped than female, body length much shorter; legs proportionately longer. Penis with inner lobe seemingly rodlike (difficult to observe); basilar lobe consisting merely of an obtuse prominence; shaft proper about 2.5 times as long as its basal thickness, distally bent upward about 34° from axis of main shaft, the deflected distal ("hook") portion being slightly longer than the shaft proper and with acuminate point.

Type slide.—Cat. No. 1111, U. S. N. M.

The type material is from Yuma, Ariz., Feb. 20, 1934, from lemon foliage. Specimens of the present species were first received from J. L. E. Lauderdale, district inspector, Yuma, Ariz. Material was also supplied by R. S. Woglum and H. C. Lewis, entomologists for the California Fruit Growers Exchange. Mr. Lauderdale writes that usually the mites are most abundant in March and April, and that they become scarce when the daily maximum temperatures reach 100° F. or over. The mite feeds chiefly on the ventral side of the leaves, spinning considerable webbing, and imparting a blotchy appearance to the foliage. Severe infestations may cause some shedding of foliage. Grapefruit and lemons are much preferred to oranges. Lauderdale states: "I am sure that the puncture vine is a host plant." He adds that the mite was first observed about 1928;



that it has never been reported outside the Yuma Valley; that complete control may be had through applications of sulfur flour.

The present species is possibly closest to *T. sexmaculatus* Riley, from which it may be distinguished as follows:

T. sexmaculatus. Female: Body color usually lemon-yellow with six blackish blotches on abdomen; forelegs not equalling body length; thickness of palpal "thumb" at base about equaling its length; terminal palpal "finger" considerably longer than thick, not spatulate in profile; collar trachea pipe-shaped, with straightish anterior tube. Egg globular, without apical stalk. Male: Penis with distal ("hook") portion of shaft bent downward, tip obliquely truncate and produced ventrally into a very inconspicuous spur.

T. yumensis. Female: Body color ferruginous; forelegs fully equalling body length; thickness of palpal "thumb" at base exceeding its length; terminal palpal "finger" about as thick as long, somewhat spatulate in profile; collar trachea also pipe-shaped, but with anterior tube deflected sharply downward to join proximal point of swollen posterior chamber. Egg slightly depressed, with dorsal axial stalk whose length is about half the axial thickness of egg. Male: Penis with distal portion of shaft bent upward, tip acuminate, with no trace of a spur.

EXPLANATION OF PLATE 27.

Tetranychus yumensis.

- Fig. 1. Penis (viewed laterally).
- Fig. 2. Right eye cornea (viewed from above).
- Fig. 3. Tarsal appendages of leg III (viewed laterally).
- Fig. 4. Distal portion of right palpus with terminal appendages (viewed from outside).
- Fig. 5. Left leg I (viewed dorsally); bristles not shown.
- Fig. 6. Collar trachea (viewed laterally).
- Fig. 7. Egg on supporting leaf (viewed laterally).

TWO UNRECORDED SUBSPECIES OF MOSSMITES (ORIBATOIDEA-ACARINA) FROM THE NORTHEASTERN UNITED STATES.

By ARTHUR PAUL JACOT, *Monroe, Connecticut.*

An intensive study of the Galumninae of the United States (in press) has brought out the important fact that indigenous species with a wide range break up into subspecies, as in Florida, California, Washington, while species recently introduced from Europe (usually found about our cities) are of the same subspecies whether at New Haven (Conn.), Gainesville (Fla.), or San Francisco. This subspecific differentiation therefore